

I claim:

1. A method for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester comprising:
 - receiving periodically a global reference time signal at a local CDMA transmitter to periodically set an internal clock of the local CDMA transmitter;
 - transmitting at least one signal from the local CDMA transmitter;
 - marking the at least one local CDMA transmitter signal with a unique pattern;
 - including time information in the at least one local CDMA transmitter signal;
 - receiving the at least one local CDMA transmitter signal containing the time information and the unique pattern at a signal tester that is otherwise obstructed from receiving a global reference time signal;
 - receiving at the signal tester at least one signal from a CDMA base station;
 - distinguishing at the signal tester the at least one CDMA base station signal from the at least one local CDMA transmitter signal, wherein the signal containing the unique pattern is identified as the at least one local CDMA transmitter signal;
 - setting an internal clock within the signal tester based on the time information included in the at least one local CDMA transmitter signal;
 - measuring at the signal tester the at least one CDMA base station signal; and
 - evaluating at the signal tester the at least one CDMA base station signal for signal propagation and coverage.
2. The method for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim1 wherein there are a plurality of CDMA base stations and further comprising:

receiving at the signal tester at least one signal from a plurality of CDMA base stations;
measuring the at least one CDMA base station signal from each of the plurality of CDMA
base stations; and
evaluating the at least one CDMA base station signal for signal propagation and coverage
from each of the plurality of CDMA base stations.

3. The method for CDMA signal testing at indoor and other locations where a global time
synchronization signal is obstructed from a signal tester of claim 1 wherein the transmitting
at least one signal from the local CDMA transmitter further comprises transmitting a pilot
signal.
4. The method for CDMA signal testing at indoor and other locations where a global time
synchronization signal is obstructed from a signal tester of claim 3 wherein the marking the
at least one local CDMA transmitter signal with a unique pattern comprises transmitting
simultaneously a plurality of closely positioned pilot signals.
5. The method for CDMA signal testing at indoor and other locations where a global time
synchronization signal is obstructed from a signal tester of claim 3 wherein the global
reference time signals are periodically received from a GPS transmitter and wherein the local
CDMA transmitter internal clock is a GPS clock.
6. The method for CDMA signal testing at indoor and other locations where a global time
synchronization signal is obstructed from a signal tester of claim 1 wherein the signal tester
comprises a psuedonoise scanner.
7. The method for CDMA signal testing at indoor and other locations where a global time
synchronization signal is obstructed from a signal tester of claim 6 wherein the psuedonoise
scanner is a pilot channel scanner and wherein the local CDMA transmitter comprises a pilot

transmitter with an internal clock and receiver for receiving periodically global reference time signals

8. The method for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 7 wherein the global reference time signals are received periodically from a GPS transmitter and wherein the internal clock is a GPS clock.

9. The method for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 7 wherein the local CDMA transmitter signal is a pilot signal containing a pilot pattern and time information and further comprising:

measuring at the signal tester a relative displacement of the pilot pattern of the local

CDMA transmitter signal from successive psuedonoise scanner scans of the local CDMA transmitter signal;

processing the measured displacement of the pilot pattern; and

adjusting a timing generator of the psuedonoise scanner to compensate for drift in the measured pilot pattern.

10. The method for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 9 wherein adjusting the timing generator of the signal tester comprises:

modifying a voltage controlled clock oscillator, a digital to analog converter and an imbedded processor.

11. A method for CDMA signal testing at indoor and other GPS obstructed locations comprising:

receiving periodically at a local CDMA pilot transmitter a global reference time signal from a GPS for setting an internal clock for creating time information;

transmitting periodically on a pilot channel a pilot signal from the local CDMA pilot transmitter;

marking the local CDMA pilot transmitter signal with a unique pattern;

including time information in the local CDMA pilot transmitter signal;

transmitting periodically the local CDMA pilot transmitter signal;

receiving periodically the local CDMA pilot transmitter signal containing time information and the unique pattern at a signal tester, wherein the signal tester comprises a psuedonoise scanner;

setting an internal clock of the singal tester by using the time information contained in the local CDMA pilot transmitter signal;

scanning at the signal tester a pilot signal from a CDMA base station;

distinguishing at the signal tester between the CDMA base station pilot signal and the local CDMA pilot transmitter signal, wherein the signal containing the unique pattern is identified as the local CDMA pilot transmitter signal;

setting an internal clock within the signal tester using the timing information contained in the local CDMA pilot transmitter signal;

compensating for a local CDMA pilot transmission signal pattern drift detected at the signal tester by adjusting a timing generator of the signal tester to modify the signal tester internal clock;

measuring at the signal tester the CDMA base station pilot signal; and

evaluating at the signal tester the CDMA base station pilot signal for signal

propagation and coverage.

12. An apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester comprising:

a local CDMA reference transmitter comprising:

a reference internal clock for maintaining time information;

a receiver for periodically receiving a global reference time signal;

a processor for setting the reference internal clock;

a unique signal pattern for marking a signal;

a transmitter for transmitting a signal, the signal comprising the unique pattern and time information and

a CDMA testing device comprising:

a tester internal clock for maintaining time information;

a receiver for receiving the local CDMA reference transmitter signal and for receiving a signal from a CDMA base station;

a processor for setting the tester internal clock;

a processor for distinguishing between the CDMA reference transmitter signal and the CDMA base station signal; and

a processor for measuring and evaluating the CDMA base station signal for adequacy of signal propagation and coverage.

13. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 12 wherein the local CDMA reference transmitter comprises a pilot channel transmitter for transmitting pilot signals.

14. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 13 wherein the unique signal pattern of the local CDMA reference transmitter comprises a plurality of closely positioned pilot signals transmitted simultaneously for creating a recognizable marker.
15. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 12 wherein the receiver comprises a GPS receiver for periodically receiving a GPS synchronized time signal and wherein the reference internal clock comprises a GPS clock for maintaining the GPS synchronized time.
16. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 13 wherein the testing device comprises a pseudonoise scanner for scanning for pseudonoise.
17. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 16 wherein the local CDMA reference transmitter comprises a transmitter for transmitting a pilot channel signal and wherein the pseudonoise scanner comprises a scanner for scanning a pilot channel.
18. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 15 wherein the universal reference time signal further comprises a GPS time signal for synchronizing time and wherein the reference internal clock comprises a GPS clock for maintaining GPS synchronized time.
19. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 12 further comprising:

a means for detecting time drift comprising:

logic for measuring relative displacement of the local CDMA reference transmitter unique signal pattern from successive pseudonoise scanner scans of the local CDMA reference transmitter pilot channel signal; and

logic for processing the relative displacement of successive measurements of the local CDMA reference transmitter unique signal pattern and

a means for adjusting the tester internal clock further comprising:

a timing generator for adjusting the signal tester internal clock; and

a timing generator adjustor for adjusting the timing generator to compensate for drift in the local CDMA reference transmitter pilot pattern.

20. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 19 wherein the timing generator adjustor comprises a delay lock loop for adjusting a timing generator to compensate for a detected timing drift.

21. The apparatus for CDMA signal testing at indoor and other locations where a global time synchronization signal is obstructed from a signal tester of claim 20 wherein the delay lock loop further comprising:

logic for modifying a voltage controlled clock oscillator;

logic for modifying a digital to analog converter; and

logic for modifying an imbedded processor.

22. An apparatus for CDMA signal testing at indoor and other GPS obstructed locations comprising:

a local CDMA reference transmitter comprising:

a reference internal GPS clock for maintaining time information;
 a receiver for periodically receiving reference time signals from GPS;
 a processor for setting the reference internal GPS clock;
 a pilot channel transmitter for transmitting a pilot channel signal;
 a unique signal pattern for marking the local CDMA pilot channel signal; and
 a CDMA testing device comprising:
 a pseudonoise scanner for receiving pilot channel signals from the local CDMA
 reference transmitter and for receiving a pilot channel signal from a CDMA base station;
 a tester internal clock for maintaining time information; and
 a processor comprising:
 logic for distinguishing between a pilot channel signal from the local CDMA
 reference transmitter and a pilot channel signal from the CDMA base station;
 logic for setting the tester internal clock,
 logic for adjusting a timing generator of the pseudonoise scanner so as to
 compensate for drift in the measured pilot pattern, and
 logic for measuring and evaluating the received signals for adequacy of signal
 propagation and coverage from the at least one CDMA base station.